# Svetlana EF86 High-Performance Audio Small-Signal Pentode



The Svetlana EF86 is a glass envelope miniature pentode intended for high-quality audio preamplifier service. Close manufacturing specification tolerances and improved processing provide improved reliability and superior sonic performance. The Svetlana EF86 is manufactured in the Svetlana factory in Russia, and is designed to be a direct replacement for any EF86 or 6267 type.

The Svetlana EF86 features:

- Low microphonics and low heater hum induction - suitable for input stages in high-gain microphone preamps, phono preamps or as a gain stage in condenser microphones
- Electrostatic shield is built-in, covers entire inner structure—no external shield required
- Low distortion in pentode or triode connection
- Extended processing and aging for stability and reliability
- Comprehensive static and audio amplifier testing before and after aging

## General Characteristics

### Electrical

| | *min.* | *typ.* | *max.* | |
|---|---|---|---|---|
| *Heater Voltage (AC or DC)* | *5.7* | *6.3* | *6.9* | *V* |
| *Heater Current (typical)* | | *0.2* | | *A* |
| *Cathode:* | | | *oxide-coated, unipotential* | |
| *Cathode-to-heater potential* | | | *±100* | *V* |

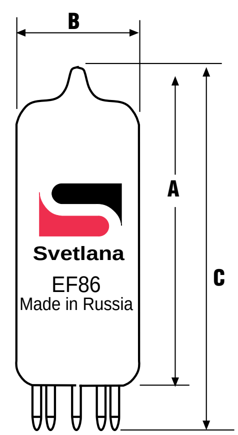
### Mechanical

| | | |
|---|---|---|
| *Operating position:* | | *Any* |
| *Base* | | *9-pin miniature noval* |
| *Basing diagram* | | *JEDEC 9CQ* |
| *Socket* | | *Svetlana SK9A or equivalent* |
| *Cooling* | | *Radiation and convection* |
| *Envelope temperature (max)* | *200* | *C* |
| *Nominal dimensions:* | | |
| *Diameter* | | *22 mm (0.867 in)* |
| *Base to top* | | *46.5 mm (1.836 in)* |
| *Overall height* | | *55.5 mm (2.180 in)* |
| *Net weight* | | *13 gm* |

### Maximum Ratings

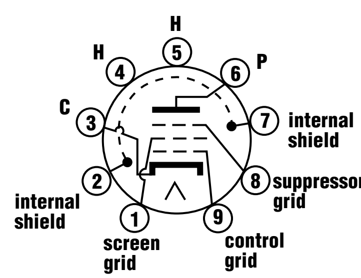
| | | |
|---|---|---|
| *DC plate voltage Vp* | *300* | *V* |
| *Screen grid voltage Vg2* | *200* | *V* |
| *Plate dissipation* | *1* | *W* |
| *Screen grid dissipation* | *0.2* | *W* |
| *Cathode current* | *6.0* | *mA* |

### Svetlana EF86 Outline drawing




| Dimensional Data | | |
|---|---|---|
| Dim. | Millimeters | Inches |
| A | 46.5 | 1.835 |
| C | 55.5 | 2.180 |
| B | 22 | 0.867 |

### Base pin connections bottom view




Svetlana ELECTRON DEVICES SM

**Headquarters:**
8200 South Memorial Parkway
Huntsville, AL 35802
USA
Phone: 205 882 1344
Fax: 205 880 8077

**Marketing & Engineering:**
3000 Alpine Road
Portola Valley, CA 94028
USA
Phone: 415 233 0429
Fax: 415 233 0439

**www.svetlana.com**

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## Typical operation, Class A Connection, Small-signal amplifier

| | pentode | triode | |
|---|---|---|---|
| DC plate Voltage | 250 | 250 | V |
| Screen grid voltage | 140 | | V |
| Cathode bias resistor | 1k | 3.9k | ohms |
| Zero-signal plate current | 3 | 0.65 | mA |
| Zero-signal screen grid current | 0.6 | | mA |
| Plate resistance (approx) | 2.5 megohms | 65k | ohms |
| Load resistance | 220k | 220k | ohms |
| Total harmonic distortion | 5 | 3.5 | % |
| Maximum voltage output | 50 | 39 | vrms |

